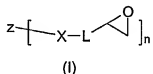


## Claims

1. A dental root canal sealing composition, which comprises

- (I) an amino terminated prepolymer having a viscosity at 23°C of less than 100 Pas, which is obtainable by reacting
- (a) one mole of a compound of the following formula (I)



wherein

Z represents

an n-valent  $C_{2-42}$  hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6  $C_{1-4}$  alkyl groups;

X represents

a single bond or  
an oxygen atom or a nitrogen atom substituted by a  $C_{1-8}$  alkyl group;

L represents

a single bond or  
an optionally substituted  $C_{1-16}$  alkylene group,  
an optionally substituted  $C_{8-14}$  arylene group,  
an optionally substituted  $C_{7-16}$  alkylenearylene group,  
an optionally substituted  $C_{7-16}$  arylenealkylene group,  
which groups may be substituted by 1 to 6  $C_{1-4}$  alkyl groups; and

n represents

an integer of from 2 to 6; and

- (b) at least n moles of one or more compounds
- (b1) of the following formula (II)

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(II)

wherein

A represents a divalent saturated aliphatic  $\text{C}_{2-16}$  hydrocarbon group or a divalent saturated cycloaliphatic  $\text{C}_{3-6}$  hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6  $\text{C}_{1-4}$  alkyl groups;

$\text{R}_a$  and  $\text{R}_b$  are the same or different and represent a hydrogen atom, a  $\text{C}_{1-8}$  alkyl or a  $\text{C}_{3-14}$  cycloalkyl group, which may be substituted by one or more members of the group selected from a  $\text{C}_{1-4}$  alkyl group,  $\text{C}_{1-4}$  alkoxy group, a phenyl group, and a hydroxy group;

or

(b2) of formula (III)



wherein  $\text{R}'$  represents

a substituted or unsubstituted  $\text{C}_1$  to  $\text{C}_{18}$  alkyl group,  
 a substituted or unsubstituted  $\text{C}_3$  to  $\text{C}_{16}$  cycloalkyl group,  
 a substituted or unsubstituted  $\text{C}_7$  to  $\text{C}_{30}$  aralkyl group, which groups may be substituted by one or more members of the group selected from a  $\text{C}_{1-4}$  alkyl group,  $\text{C}_{1-4}$  alkoxy group, a phenyl group, and a hydroxy group,

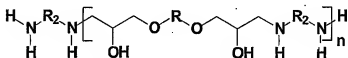
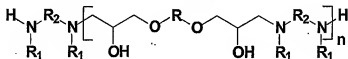
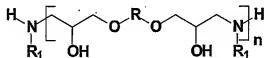
optionally in combination with a further di- or polyamine compound;

- (ii) a compound capable of undergoing polyaddition with the aminoterminated prepolymer (i);
- (iii) 40 to 85 wt.-% of a filler for providing a minimum radioopacity of at least 3mm/mm Al.

2. The dental root canal sealing composition according to claim 1, wherein

Z represents a saturated aliphatic  $C_{2-18}$  hydrocarbon chain which may contain 2 to 4 oxygen atoms, and which may be substituted by 1 to 6  $C_{1-4}$  alkyl groups or a substituted or unsubstituted  $C_7$  to  $C_{30}$  arylenealkylenearylene group which may be substituted by 1 to 6  $C_{1-4}$  alkyl groups.

3. The dental root canal sealing composition according to claim 1, wherein X is an oxygen atom and/or L is an alkylene group, preferably a methylene group, and/or wherein X-L is  $-OCH_2-$ .
4. The dental root canal sealing composition according to claim 1, wherein n is 2.
5. The dental root canal sealing composition according to claim 1, wherein the aminoterminated prepolymer is a prepolymer of one of the following formulas



wherein

R represents Z as defined in claim 1, preferably a divalent

substituted or unsubstituted  $C_1$  to  $C_{18}$  alkylene group,  
 substituted or unsubstituted  $C_{6-14}$  arylene group,  
 substituted or unsubstituted  $C_3$  to  $C_{18}$  cycloalkylene group,  
 substituted or unsubstituted  $C_7$  to  $C_{30}$  arylenealkylenearylene group,

$R_1$  represents

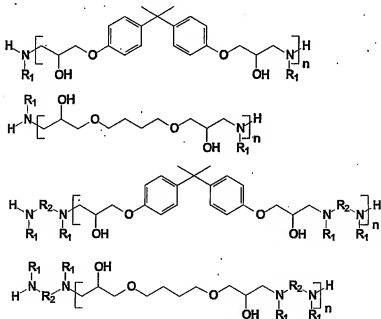
hydrogen or  
 a substituted or unsubstituted  $C_1$  to  $C_{18}$  alkyl group,  
 a substituted or unsubstituted  $C_3$  to  $C_{18}$  cycloalkyl group,  
 a substituted or unsubstituted  $C_7$  to  $C_{30}$  aralkyl group,

$R_2$  represents a divalent

substituted or unsubstituted  $C_1$  to  $C_{18}$  alkylene group,  
 a substituted or unsubstituted  $C_3$  to  $C_{18}$  cycloalkylene group,  
 a substituted or unsubstituted  $C_7$  to  $C_{30}$  aralkylene group, and

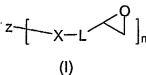
$n$  is an integer.

6. The dental root canal sealing composition according to claim 5, wherein the aminoterminated prepolymer is a prepolymer of one of the following formulas



wherein R<sup>1</sup> and R<sup>2</sup> are defined as in claim 5.

7. The dental root canal sealing composition according to claim 1, wherein the compound capable of undergoing polyaddition with the aminoterminated prepolymer (I) is selected from a di- or polyfunctional acrylate, a di- or polyfunctional epoxide, a di- or polyfunctional isocyanate, a di- or polyfunctional isothiocyanate, a di- or polyfunctional acylamide, or a di- or polyfunctional maleimide.
8. The dental root canal sealing composition according to claim 1, wherein the filler contains La<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub>, BiPO<sub>4</sub>, CaWO<sub>4</sub>, BaWO<sub>4</sub>, SrF<sub>2</sub>, Bi<sub>2</sub>O<sub>3</sub>.
9. The dental root canal sealing composition according to claim 1, which is in the form of a two-component composition.
10. The dental root canal sealing composition according to claim 12, wherein the two-component composition is a powder/liquid or a paste/paste system.
11. Use of the dental material of claim 1 for the manufacture of prefabricated root canal cones.
12. an amino terminated prepolymer having a viscosity at 23°C of less than 100 Pas, which is obtainable by reacting
  - (a) one mole of a compound of the following formula (I)



wherein

Z represents an n-valent C<sub>2-42</sub> hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6 C<sub>1-4</sub> alkyl groups;

X represents

a single bond or  
an oxygen atom or a nitrogen atom substituted by a  $C_{1-8}$  alkyl group;

L represents

a single bond or  
an optionally substituted  $C_{1-10}$  alkylene group,  
an optionally substituted  $C_{6-14}$  arylene group,  
an optionally substituted  $C_{7-10}$  alkylarylene group,  
an optionally substituted  $C_{7-10}$  arylalkylene group,  
which groups may be substituted by 1 to 6  $C_{1-4}$  alkyl groups; and

n represents

an integer of from 2 to 6; and

(b) at least n moles of one or more compounds

(b1) of the following formula (II)



wherein

A represents a divalent saturated aliphatic  $C_{2-16}$  hydrocarbon group or a divalent saturated cycloaliphatic  $C_{3-8}$  hydrocarbon group, which groups may contain 1 to 6 oxygen atoms, and which may be substituted by 1 to 6  $C_{1-4}$  alkyl groups;

$R_a$  and  $R_b$  are the same or different and represent

a hydrogen atom, a  $C_{1-6}$  alkyl or a  $C_{3-14}$  cycloalkyl group, which may be substituted by one or more members of the group selected from a  $C_{1-4}$  alkyl group,  $C_{1-4}$  alkoxy group, a phenyl group, and a hydroxy group;

or

(b2) of formula (III)



wherein R' represents

a substituted or unsubstituted C<sub>1</sub> to C<sub>18</sub> alkyl group,

a substituted or unsubstituted C<sub>3</sub> to C<sub>18</sub> cycloalkyl group,

a substituted or unsubstituted C<sub>7</sub> to C<sub>30</sub> aralkyl group, which

groups may be substituted by one or more members of the group

selected from a C<sub>1-4</sub> alkyl group, C<sub>1-4</sub> alkoxy group, a phenyl group, and a hydroxy group,

optionally in combination with a further di- or polyamine compound,

in a dental composition.